

ABSTRACT

The present invention provides a rapid and sensitive method for the detection of a West Nile virus (WNV), Japanese encephalitis virus (JEV), St. Louis encephalitis virus (SLEV) and Dengue virus (DENV) and antibodies directed against thereof involving contacting a biological specimen suspected of being infected with WNV, JE, SLE or DEN with a substantially purified and isolated WNV E glycoprotein or subfragment thereof having a native conformation wherein the E glycoprotein or subfragment thereof has a reactivity with antibodies against WNV and a cross-reactivity with antibodies against JEV, SLEV and DENV. The instant invention further provides a rapid, sensitive, and consistent method for the specific detection of WNV by employing diagnostic assays having the antigen NS5 which is specifically reactive with anti-WNV antibodies but not cross-reactive with antibodies against other flaviviruses such as JEV, SLEV, or DENV. The present invention also provides a rapid, sensitive, and consistent method for the specific detection of DENV by employing diagnostic assays having the antigen NS5 which is specifically reactive with anti-DENV antibodies but do not cross-react with antibodies against other flaviviruses such as JEV, SLEV, or WNV. Further, the DENV NS5 antigens are serospecific and do not cross react with antibodies to other DENV strains. Thus, the method of the present invention provides a manner by which to discriminate infections by each DENV strain. Further, diagnostic kits for carrying out the methods are provided. The methods and kits for carrying out the methods of the invention are rapid and require as little as 10 minutes to detect a result.